

## **ROBUST MODELING**

### **ABSTRACT OF THE DISCLOSURE**

A system and method are disclosed for generating a robust model of a system that selects a modeling function. The modeling function has a set of weights and the modeling function has a complexity that is determined by a complexity parameter. For each of a plurality of values of the complexity parameter an associated set of weights of the modeling function is determined such that a training error is minimized for a training data set. An error for a cross validation data set is determined for each set of weights associated with one of the plurality of values of the complexity parameter and the set of weights associated with the value of the complexity parameter is selected that best satisfies a cross validation criteria. Thus, the selected set of weights used with the modeling function provides the robust model.

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